

PRESS RELEASE

MANN+HUMMEL and Centrale Nantes extend their research partnership on the energy efficiency of filtration systems.

Nantes, 21 February 2024

Following on from the international research chair focusing on clean engines established in January 2014, the international group MANN+HUMMEL and Centrale Nantes are extending their partnership to continue exploring new solutions to **improve air quality** with sustainable systems that are notably **more energy-efficient**.

Air quality standards are becoming increasingly stringent. Whether at home, at work, at school or on our means of transport, we spend an average of 85% of our time in confined spaces. Indoor air quality (IAQ) is a public health concern.

A main thrust of the partnership with the Research Laboratory in Hydrodynamics, Energetics & Atmospheric Environment (LHEEA) at Centrale Nantes is to develop innovative systems that are more energy-efficient, using a systemic approach to MANN+HUMMEL's filtration solutions.

The team led by chairholder Professor David Chalet, at Centrale Nantes, and Jérôme Migaud, Director of Innovation and Advanced Technologies at MANN+HUMMEL, has made significant advances in air quality in confined and semi-confined spaces.

Major improvements have been made to the air quality of an electric vehicle thanks to innovations linked to the air conditioning system, which deliver greater filtration efficiency combined with lower energy consumption, thereby extending the vehicle's range. In the same vein, solutions have been developed to filter the air on railway station platforms, in order to improve air quality. A trial is currently underway in an underground railway station in Paris.

This new five-year research chair will provide support for four engineers, a PhD student and several Master's student internships. The new partnership will focus on improving air quality with lower energy needs, as well as research into the filtration systems needed for low-emission, low-carbon propulsion technologies, a key driver of the sustainable mobility of the future. It follows on from collaborative work that began more than 15 years ago in the form of theses and collaborative projects.

Markus Kolczyk, Vice President R&D at MANN+HUMMEL: *"I am very pleased to celebrate 10 years of fruitful collaboration and partnership between Centrale Nantes and MANN+HUMMEL. Our partnership has been distinguished by excellent technical and scientific work combined with a high level of agility and flexibility. I look forward to pursuing our collaboration"*.

Vishwas Gawade, Vice President Advanced Technologies at MANN+HUMMEL: *"As partners of Centrale Nantes, we are pleased with the excellent collaboration over the past 10 years, which has enabled us to invest in innovation to meet societal needs, stimulate progress and foster sustainable development"*.

Jean-Baptiste Avrillier, Director of Centrale Nantes: *"We are particularly proud of this long-term partnership with MANN+HUMMEL in our areas of excellence. This advanced scientific research is perfectly in tune with our commitment to energy transition and the decarbonisation of transport."*

About MANN+HUMMEL

MANN+HUMMEL is a leading global company in filtration technology. Under its two business units Transportation and Life Sciences & Environment, the Ludwigsburg-based Group (Germany) develops intelligent filtration and separation solutions that enable cleaner mobility, cleaner air, cleaner water, and cleaner industry. Thus, the 1941 founded family-owned company makes an important contribution to a clean earth and the sustainable use of limited resources. In 2022, over 22,000 employees at more than 80 locations generated a turnover of EUR 4.8 billion.

About Centrale Nantes

Founded in 1919, Centrale Nantes is a French engineering school with excellent rankings: 4th best engineering school in France (L'Etudiant 2024), and top 300 worldwide for engineering (Times Higher Education). Its undergraduate, Master and PhD programmes are based on the latest scientific and technological developments and the best management practices. With strong international outreach, 40% of its student body are international students, representing more than 87 nationalities. Partnership agreements are in place with 178 universities in 48 countries and two-thirds of students follow a double degree programme abroad. At Centrale Nantes, research and training are organised into three key areas for growth and innovation: industry of the future, energy transition and engineering for health. With research platforms ranging from digital simulation to prototyping with full-scale models, and a joint incubator - with Audencia and ensa Nantes - which has 20 years of experience in supporting start-up projects, the school has major tools for innovation and creation, working hand-in-hand with industry. Through a proactive approach of collaborative research between laboratories and industry, Centrale Nantes is developing initiatives for the creation of international chairs, of which there are 15 to date.

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